

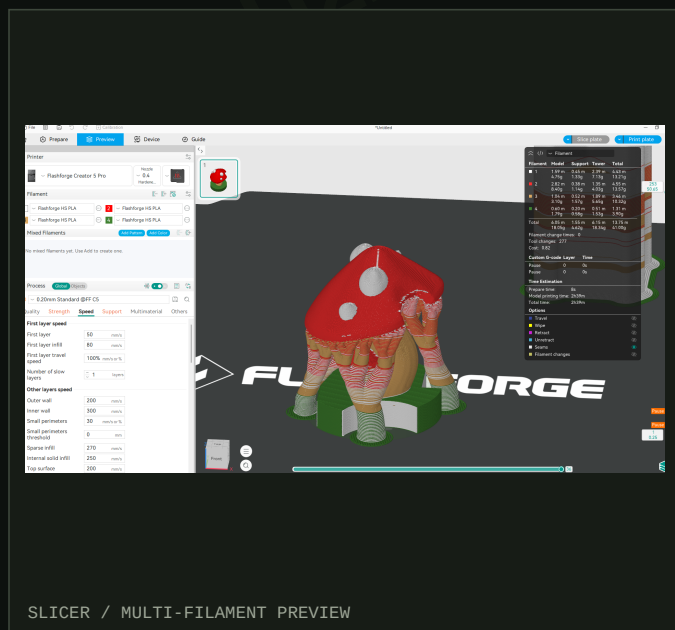
MODEL STUDY / RECOVERED SHARED RECORD

DATUM SHROOM

3D scan alignment marker / asymmetry as signal

A compact mushroom-shaped registration marker designed to give phone and photogrammetry scans a repeatable orientation signal through irregular gear-like teeth, varied bumps, a bite notch, and an optional magnetic base.

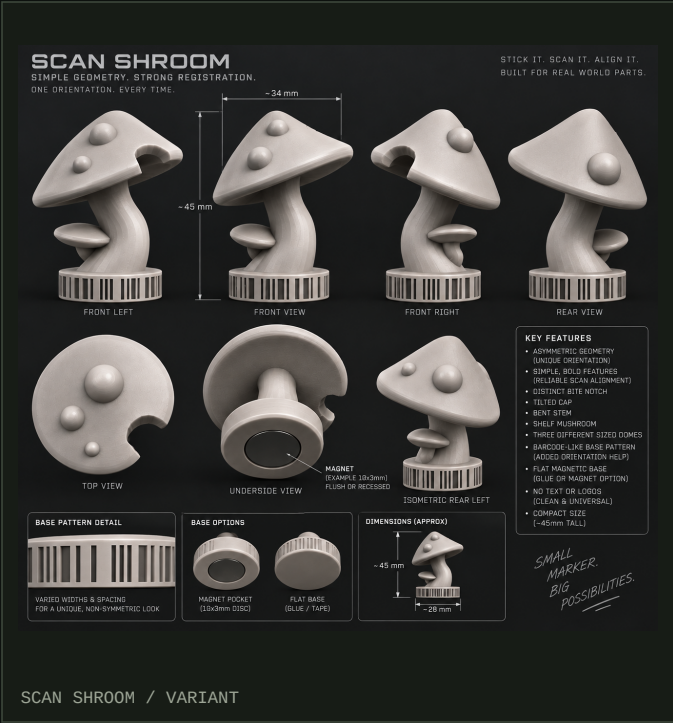
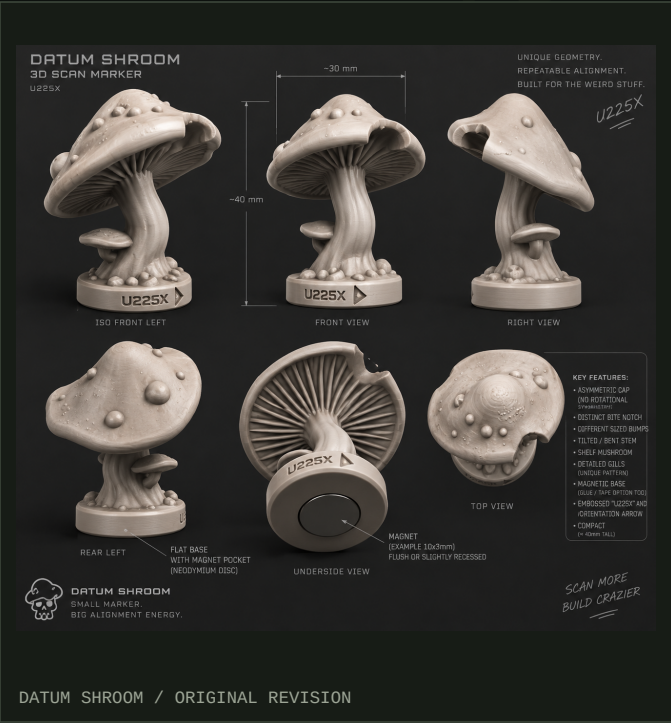
STATUS	RECOVERED / EXPERIMENTAL
CLASSIFICATION	MDL / MODEL STUDY
REVISION	IMPORT-01
SOURCE	U225X LOCAL SUMMARY + ATTACHED IMAGE SET



DESIGN INTENT

The marker is deliberately not rotationally symmetric. Its irregular base, offset bumps, cap notch, shelf mushroom, and changing feature sizes are intended to help a scanner recognize which way the object is facing and to support repeatable registration between captures.

PURPOSE	Repeatable scan registration and orientation
GEOMETRY	Asymmetric cap / irregular gear base / bumps / bite notch
SCALE	Approx. 34 mm wide x 45 mm tall
BASE	Optional 10x3 mm magnet pocket or flat base
PRINT	0.20 mm layers / matte single-color option



DESIGN RULE / SIMPLE GEOMETRY + DISTINCT REGISTRATION FEATURES

CAPTURE + SURFACE PREP

The reference set shows several ways to support a scan: simple geometric markers, field target layouts, matte surface preparation, and before/after treatment. The spray references are documentation, not a recommendation to use a specific brand.

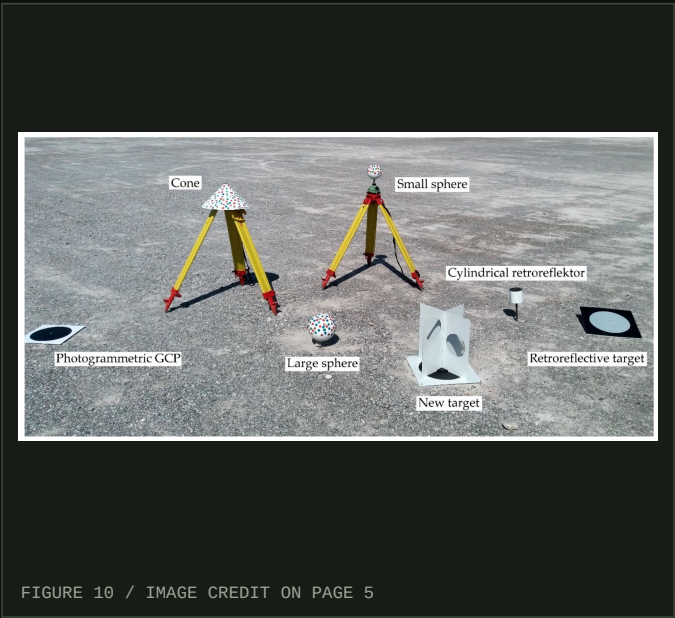


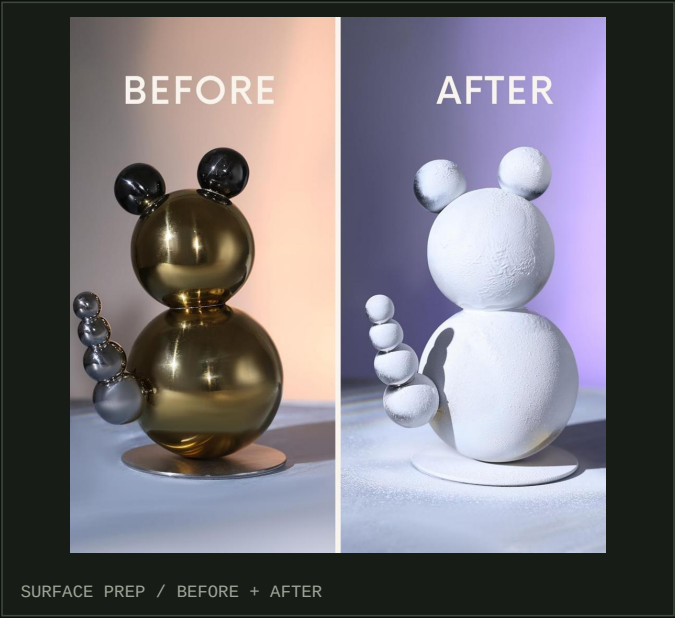
FIGURE 10 / IMAGE CREDIT ON PAGE 5



REFERENCE MARKER



MARKER SET / SIMPLE FORMS



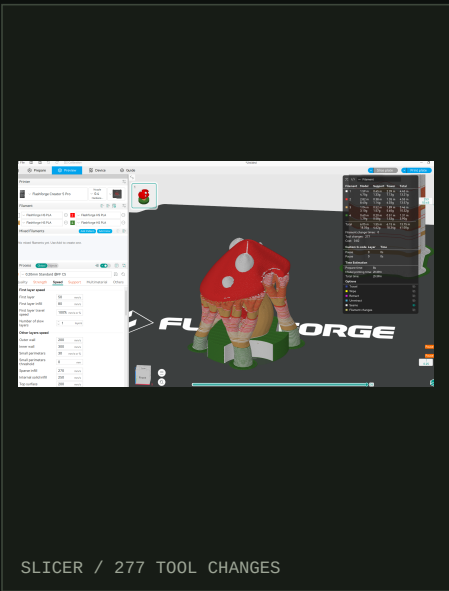
SURFACE PREP / BEFORE + AFTER

SURFACE PREP / FOLLOW PRODUCT LABEL + SDS / USE VENTILATION

PRINT + VALIDATION NOTES

The shared slicer preview used 0.20 mm layers and very high perimeter speeds. The practical first test is to keep the layer height, slow the outer and top surfaces, and print one matte color so the scanner sees geometry rather than a multi-filament change sequence.

OUTER WALL	Start around 100-120 mm/s
INNER WALL	Start around 180-220 mm/s
TOP SURFACE	Start around 80-100 mm/s
SMALL PERIMETERS	About 30 mm/s is appropriate
MODEL VS TOWER	18.05 g model / 18.34 g tower in preview
NEXT TEST	Compare repeat alignment against a simple marker



VALIDATION STATUS / EXPERIMENTAL / CONTROLLED SCAN COMPARISON STILL REQUIRED

IMAGE SOURCES + REUSE**Field target layout (page 3, top left)**

Figure 10 from Tilen Urbancic, Ziga Roskar, Mojca Kosmatin Fras and Dejan Grigillo, *New Target for Accurate Terrestrial Laser Scanning and Unmanned Aerial Vehicle Point Cloud Registration*, *Sensors* 19(14), 3179 (2019). Copyright 2019 the authors. Licensed under Creative Commons Attribution 4.0 International (CC BY 4.0).

Source: <https://doi.org/10.3390/s19143179>

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Shown separately from the article and scaled to fit this report. No content edits made by U225X.

Other project and reference images

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Current record: <https://u225x.com/record/MDL-DATUM-001>